

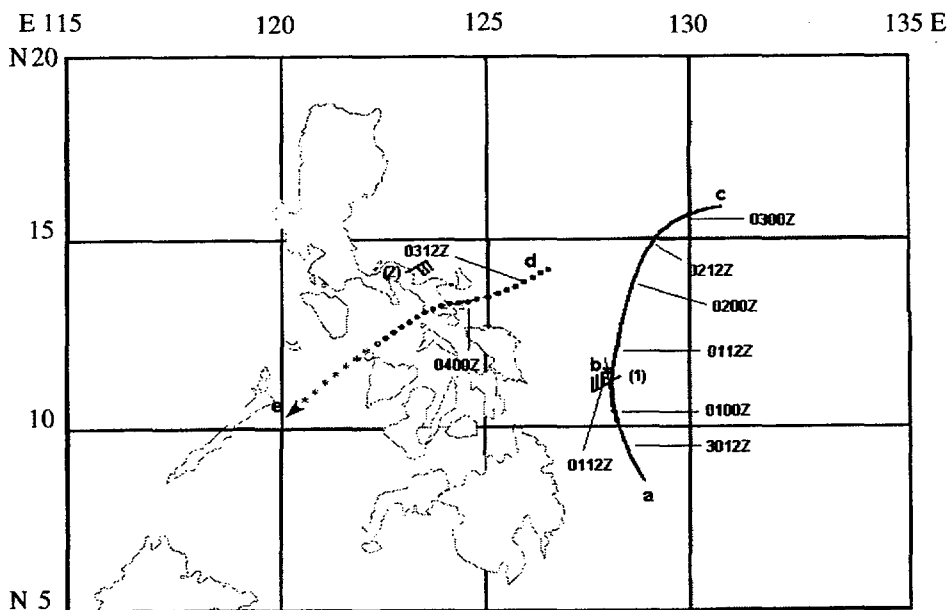
## TROPICAL DEPRESSION 32W

### I. HIGHLIGHTS

Tropical Depression 32W (TD 32W) was originally treated as two separate tropical cyclones by the JTWC — TD 32W and TD 33W. The decision to combine the two tropical cyclones was based on a rigorous postanalysis. It is the first time since 1989, when Tropical Storm Ken and Tropical Storm Lola were designated as Tropical Storm Ken-Lola, that two tropical cyclones that were warned on separately have been subsequently designated as a single tropical cyclone. The after-the-fact designation of TD 32W and TD 33W as one system (i.e., TD 32W) underscores the difficulty that occasionally occurs in warning on poorly organized tropical cyclones. TD 32W developed east of Mindanao, tracked across southeastern Luzon near Legaspi, and dissipated in the Sulu Sea.

### II. TRACK AND INTENSITY

The origin of Tropical Depression 32W can be traced to a tropical disturbance that formed on 30 November about 150 nm (280 km) east of Mindanao. The disturbance was first mentioned on the 300600Z November Significant Tropical Weather Advisory. For two days, the low-level circulation center (located on the west side of a 150 nm wide area of deep convection) moved slowly to the north-northwest. On 02 December, the deep convection appeared on satellite imagery to have become better organized and a Tropical Cyclone Formation Alert was issued at 020430Z. The first warning on TD 32W was issued, valid at 020600Z based on a satellite-derived intensity of 30 kt (15 m/sec). A Navy drifting buoy (WMO 52523) — the same one that survived an earlier nearby passage of Angela (29W) — recorded sustained southwest winds of 30 kt (15 m/sec) at 020300Z (Figure 3-32-1). TD 32W was forecast to recurve to the northeast and intensify. As the deep convection moved northward, however, it moved into a deformation zone along the shearline and appeared to split into two parts: one part moved to the northeast and the other part moved to the west (see the Discussion Section). The final warning on TD 32W was issued, valid at 030000Z, as the area of deep convection that was moving to the northeast along the shearline dissipated. In Figure 3-32-1, the track a-b-c shows the original working best track of TD 32W.



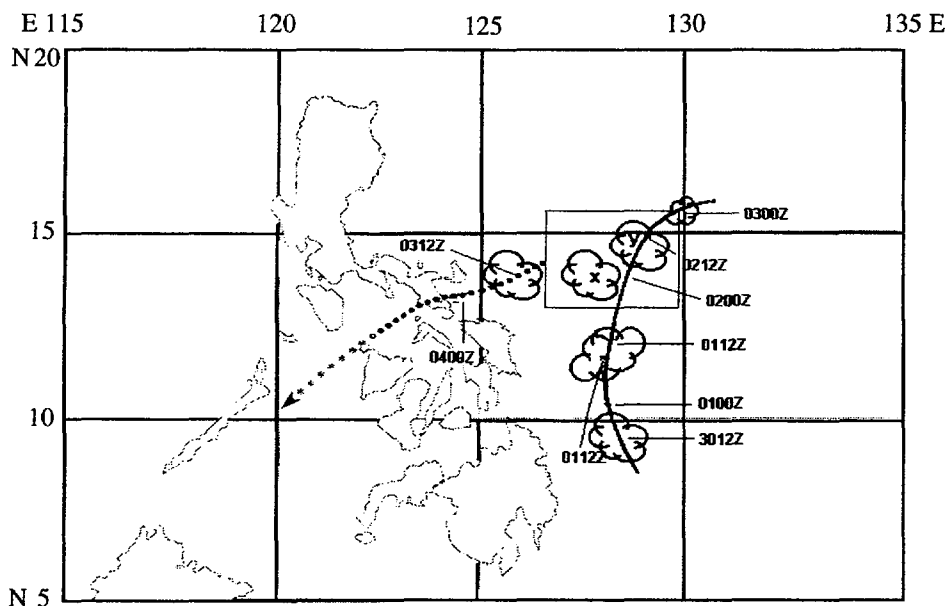
**Figure 3-32-1** Working best track of the original TD 32W (indicated by the curved line labeled, a-b-c), and the working best track of the original TD 33W (indicated by the dotted line, d-e) are shown. Supporting synoptic observations shown are: (1) the wind from the Navy drifting buoy (WMO 52523) at 020300Z December, and (2) the wind observed at Daet (WMO 98440) at 040000Z December.

As convection associated with TD 32W dissipated, another area of deep convection was noted to its west and mentioned on the 030600Z December Significant Tropical Weather Advisory. A Tropical Cyclone Formation Alert was issued at 040030Z. The first warning on TD 33W was issued by the JTWC, valid at 040600Z. During the night of 04 December, the low-level circulation center of TD 33W (Figure 3-32-1) passed over the Bicol region of southern Luzon, where, earlier in the day, maximum sustained winds of 30 kt (15 m/sec) were observed at Daet (WMO 98440). The deep convection associated with the system decreased and the final warning was issued by the JTWC, as TD 33W moved into the northern Sulu Sea.

### III. DISCUSSION

#### *Rationale for combining TD 32W with TD 33W*

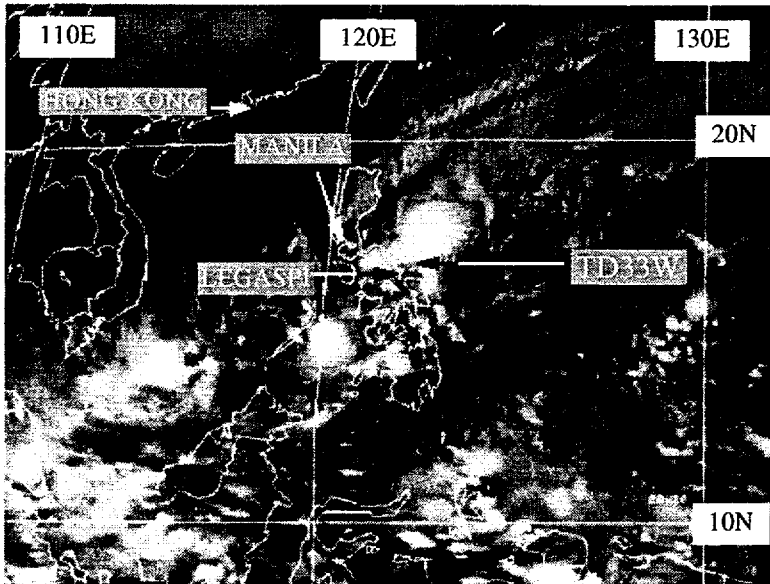
Track a-b-c in Figure 3-32-1 was the working best track of the original TD 32W and track d-e was the working best track of the original TD 33W. Figure 3-32-2 illustrates the separation of convection into the two areas (labeled, x and y). Cloud system y (the area of deep convection that moved northeast along the shear line) was initially believed to contain a vertically coupled low-level cyclonic circulation (i.e., TD 32W). When cloud system x (the area of deep convection that moved to the west over the Philippines) showed signs of becoming better organized it was thought to be associated with a new low-level circulation center, and hence was warned on as TD 33W (Figure 3-32-3). A careful reexamination of synoptic data suggests that there was all along only one low-level circulation center throughout the period and that the motion of the masses of convection was not directly associated with the movement of the low-level circulation center.



**Figure 3-32-2** Schematic illustration of the movement and splitting of the mesoscale convective system (MCS) that was the original TD 32W into elements x and y. MCS "x" became TD 33W (working best track is indicated by the dotted line). MCS "y" was thought to have been associated with a recurving TD 32W (working best track is indicated by the solid line).

### IV. IMPACT

At least 14 people were reported killed in floods and landslides in the Philippines. Twelve people were buried in a landslide that occurred at Viga, Catanduenas Island. The two others drowned in flooding at other villages of the Bicol region of southeastern Luzon.



**Figure 3-32-3** The deep convection associated with the original TD 33W (later combined with TD 32W) as it passes over southeastern Luzon near Legaspi (041233Z December infrared GMS imagery).